

All the specimens were found in close association with the roots of *Dipodium punctatum*. From this fact two things may be hoped:—(1) That the association is not merely fortuitous, otherwise the discovery of further material may be very difficult; (2) that the desire to find *Cryptanthemis* will not lead to wanton damage to the roots of the beautiful Hycinch Orchid. It is most desirable that further specimens of *Cryptanthemis* should be discovered, with living flowers, but care should be taken to avoid injuring *Dipodium* during the search. I imagine that the best time to investigate will be as soon as *Dipodium* shoots are observed above ground. The nature of the ground where the discovery was made is barren and stony, on the lower slopes of the Alum Mountain.

THE STINGLESS BEES OF AUSTRALIA.

By TARBTON RAYMENT.

6. THE FINDING OF A NEW SPECIES.

I have a correspondent in the far north-west of the Commonwealth, at Wyndham, and a short account of his unusual locality, together with the results of his activities, may not be altogether uninteresting. My friend, Doctor Webster, is in charge of the hospital.

Well, I was anxious to have some bees from such a remote district, so I wrote to my friend, asking him to fill in any spare moments that he might have by collecting a few honey-gatherers.

I then discover that the doctor has to overcome certain disabilities in his quest. There is the heat, for example. The contents of a bottle of chloroform, placed in the cellar, vanish like magic.

There is very little air circulation, for the town is built at the apex of a long inlet of the sea, and at the foot of the encompassing hills that press so close there is only space for the main street between the rises and the water. A passage through the hills serves to let the cattle travel to the coast, and affords to the residents of the township a gateway to the vast, unknown interior of the north-west.

"The bush"—that is, the trees and all the many species of flowering plants—are a few miles inland, say, eight or ten. Of course, in the summer, which is the rainy season, travel is exceedingly uncomfortable; but when the rains are over, and the "bush" bursts into bloom, the doctor and his wife travel outback in his motor car to hunt for bees.

He obtains a number of extraordinary forms, and adds several genera to the fauna of his great State. There is the great Carpenter-Bee, *Xylocopa*; strange leaf-cutters that do not look like *Megachile*, and also a new species of the social bees. In this paper I must confine myself to *Trigona*; the others will be described else-

where. Doctor Webster collected ten species of bees, eight of which were new to science.

Trigona websteri, sp. nov.

Worker.—Length, 5 mm. approx.

Head wide, bright, finely punctured, with numerous appressed short white hairs, black; face-marks confined to a dull-white spot at the bases of the anterior orbital margins; frons large, shining, with numerous appressed white plumose hairs; clypeus black, shining, with a light-amber median spot and a small, triangular, dull-white mark laterally; supraclypeal area with a sub-triangular, dull-white mark; genae with numerous short white hairs; labrum dull white; mandibulae black basally, reddish apically, with a median pale-amber patch; antennae fulvous beneath, darker above, scape with white stripe anteriorly.

Prothorax black, with dull-white patches; tubercles dull white; mesothorax black, bright, with even, minute puncturing, a few white hairs, and fine, narrow, creamy line bordering the lateral margins; scutellum creamy-yellow, except for a bracket-shaped median dark mark, a few long white hairs; mesothorax with a scale-like sculpture and a small, depressed median area; abdominal dorsal segments black, polished, the hind margins with a narrow band of lineolate sculpture, six creamy-white, with a few white hairs; each ventral segment with a fringe of long, white, curled hair forming a good scopa.

Legs black, with white hair, a pale dot on the anterior knees; tarsi slightly lighter; claws reddish-brown; tegulae and axillae testaceous; wings hyaline, iridescent, anterior 4 mm., the apex of the radius obsolete in some specimens, the other nervures amber, and more or less obsolete; pterostigma pale-amber, with a darker margin; hamuli six in number.

Locality.—Wyndham, North-western Australia (U. N. Webster, M.D., 25th January, 1931).

Type in the collection of the author.

Allies.—Very close to *T. cockerelli* Raym., which is itself close to *T. cassiae* Ckll. The first has a more convex clypeus, and lacks the median dot; the scapes are not so pale; hind margins of the abdominal dorsal segments broadly light-reddish, and the basal one lighter; lighter legs with paler hind tarsi; much less hair on the disc of the thorax; the metathorax has a depressed area running down to the petiole. The yellow markings of this species are darker.

T. cassiae has shorter scapes, but a much longer flagellum; no median clypeal spot; abdominal dorsal segments covered with a lineolate sculpture, a large amount of yellow on five and six; much yellow on legs; darker tegulae, axillae, nervures and pterostigma. The species is dedicated to the collector, Doctor U. N. Webster, of the Wyndham Hospital.

Synopsis of the Workers.

Black, without yellow face-marks.

1. Worker—Length, 3.4 mm. approx.

Shining; face and pleura below tegulae covered with short, scale-like, white hair; antennae very obscurely lighter beneath.

Trigona carbonaria Smith.

2. Worker—Length, 4 mm. approx.

Shining; face and pleura with short, white, scale-like hair; disc of mesothorax with pale hairs among the black ones; antennae with a little red basally and apically; difficult to separate from the species.

Trigona carbonaria angophorae Cockerell.

3. Worker—length, 4.5 mm. approx.

Shining; face with more white hair; scutellum with much coarse black hair; flagellum a clear red beneath; larger than 1.

Trigona hockingsi Cockerell.

4. Worker—Length, 4.3 mm. approx.

Shining; face with white hair; scattered punctures on each side of ocelli; tibiae with long black hair; antennae piccous beneath. Doubtful for Australia.

Trigona canifrons Smith.

5. Worker—Length, 4 mm. approx.

Shining; face with white hair; clypeus anteriorly, antennae and legs rufotestaceous; abdomen brownish; there seems to be some doubt about this species.

Trigona laeviceps Smith.

Black, with yellow markings.

6. Worker—Length, 4 mm. approx.

Face with white hair; scape, elevated scutellum; sides of mesothorax and tubercles all testaceous; abdomen brownish, with white hair at apex. Doubtful for Australia.

Trigona cincta Mocsary.

7. Worker—Length, 5 mm. approx.

Light, creamy-colour face-marks; pale band on scutellum; pale margins on mesothorax laterally.

Trigona cincta percineta Cockerell.

8. Worker—Length, 4.5 mm. approx.

Antennae blackish above, flagellum fulvous beneath; two minute dots laterally at anterior margins of clypeus; a crescentic cream mark on supraclypeal area; cream tubercles; two cream dots on scutellum; mandibles maber.

Trigona symei Rayment (in MS.).

9. Worker—Length, 4 mm. approx.

Mandibulae, labrum, clypeus, and lateral face-marks, tubercles and scutellum all yellow; abdomen brownish.

Trigona essingtoni Cockerell.

10. Worker—Length, 4.5 mm. approx.

Scutellum with an interrupted creamy-yellow band, and dark, fuscous hair; tubercles yellow.

Trigona cassiae Cockerell.

11. Worker—Length, 4 mm. approx.

Clypeus reddish; abdomen fuscous, apex with white hair.

Trigona australis Friese.

12. Worker—Length, 3.7 mm. approx.

Mandibles yellowish; scape orange; scutellum and metathorax dark reddish-amber; legs black; abdomen honey-colour. A variety from Cape York has dark scapes. *Trigona wybenica* Cockerell.

13. Worker—Length, 5 mm. approx.

A dull-white spot at base of orbital margin; yellow band on clypeus dilated laterally; scutellum largely yellow; lateral margins of mesothorax yellow; legs black. *Trigona cockerelli* Rayment.

14. Worker—Length, 4.5 mm. approx.

Clypeus with more white hair than 13; yellow markings very indistinct. (Male has yellow scutellum and postscutellum, and three yellow bands on apical segments of abdomen.)

Trigona cockerelli ornata Rayment (in MS.).

15. Worker—Length, 5 mm. approx.

Clypeus with a median pale dot; all markings dull-white; long scapes, but short flagellum; tegulae and axillae testaceous; no pale hind margins of polished smooth abdominal dorsal segments, but each has a narrow area apically of lineolate sculpture; legs black; scutellum largely yellow.

Trigona websteri Rayment.

Amber-coloured species.

16. Worker—Length, 3.6 mm. approx.

Antennae blackish-brown; abdomen light-amber; legs amber; yellowish hair.

Trigona melipes Friese.

CORRECTION.

Page 43, June issue. No. 8, in explanation of Figure 1, should read:—Tarsal claw of the Beetle.

The study of Australian sea-slugs is being pursued by Miss Joyce K. Allan, Assistant in Conchology, Australian Museum, Sydney, who will contribute a paper on the group to *The Naturalist*. A colour plate, from the original painting by Miss Allan, will accompany the paper, which should prove of great interest to Club members. The scope, in Victoria, for work on sea-slugs is almost limitless, for only one species has been scientifically recorded for this State. Many more must reward a keen collector of these marine creatures, and the quest is commended to our young members especially.